



MassDEP Geographic Response Plan – 2016 Edgartown Harbor First Responder Exercise

October 25, 2016

The After-Action Report/Improvement Plan (AAR/IP) aligns exercise objectives with preparedness doctrine to include the National Preparedness Goal and related frameworks and guidance. Exercise information required for preparedness reporting and trend analysis is included; users are encouraged to add additional sections as needed to support their own organizational needs.

EXERCISE OVERVIEW

Exercise Name	2016 Edgartown Harbor First Responder Exercise
Exercise Dates	October 25, 2016
Scope	This exercise is a Full Scale Exercise, planned for approximately six hours in Edgartown, MA and upon the waters of Katama and Mattakeset Bay. Exercise play is limited to Katama and Mattakeset Bay and adjacent shoreline in the vicinity of the Katama Public Boat Ramp
Mission Area(s)	Response
Core Capabilities	Environmental Response/Health and Safety, Operational Coordination, Operational Communications
Objectives	<p>Objective 1: Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics.</p> <p>Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Assignment List (ICS 201) and implementation of on-site incident management and tactical operations.</p> <p>Objective 3: Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire departments, police departments, harbormasters, and other state and federal first responders using VHF communications.</p>
Threat or Hazard	Discharge of oil into a navigable waterway
Scenario	An oil spill has occurred that threatens Katama and Mattakeset Bay. The Edgartown, Oak Bluffs, and Tisbury Fire Departments and Harbormasters staff will utilize MassDEP GRP tactics to deploy protective booming to protect sensitive resources in and near Katama and Mattakeset Bay and the surrounding area.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP).

Participating Organizations

Participating organizations included:

- Edgartown Fire Department
- Edgartown Harbormaster
- Oak Bluffs Fire Department
- Oak Bluffs Harbormaster
- Tisbury Fire Department
- Tisbury Harbormaster
- Massachusetts Department of Environmental Protection (MassDEP)
- Massachusetts Steamship Authority
- U.S. Coast Guard Sector Southeastern New England (USCG)
- Moran Environmental Recovery (MER)
- Nuka Research and Planning Group, LLC (Nuka Research)

Note: See Appendix B for participant count

Point of Contact

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Training being conducted in the Edgartown Fire Department training room.



Equipment familiarization training being conducted in the parking lot at the Katama boat ramp.



Photos courtesy of Nuka Research & Planning Group



Figure 1. Containment and diversion booming tactics for Edgartown exercise.

ANALYSIS OF CORE CAPABILITIES

Aligning exercise objectives and core capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned core capabilities, and performance ratings for each core capability as observed during the exercise and determined by the evaluation team. Table 2 includes compiled data from the Exercise Evaluation Guide (EEG) including the organizational capability targets, associated critical tasks, and observations as observed during the exercise and determined by the evaluation team.

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics.	Environmental Response/ Health and Safety	P			
Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.	Operational Coordination	P			
Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire, police and harbor master departments using VHF communications	Operational Communications	P			
<p>Ratings Definitions:</p> <ul style="list-style-type: none"> Performed without Challenges (P): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. Performed with Some Challenges (S): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified. Performed with Major Challenges (M): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws. Unable to be Performed (U): The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s). 					

Table 1. Summary of Core Capability Performance

Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
Environmental Response/ Health and Safety	Overview of Response Equipment	<ul style="list-style-type: none"> • Access Mass DEP Trailer • Identify boom and sorbents • Connect boom together • Connect towing bridle to boom • Connect components of anchor system together 	<ul style="list-style-type: none"> • Performed without Challenges (P) • All skills successfully demonstrated during the exercise • MassDEP trailers were readily accessible. All response equipment readily available and in good condition with some minor exceptions. • Slide hammers were not in any trailers on the island. Recommendation: <u>Replace sledgehammers with slide hammers during the normal inspection cycle.</u> • Small sections of boom and mock rebar shore anchor proved to be outstanding instructional aids. • All personnel had the opportunity to connect boom sections for familiarization.
	Basic Booming Operations	<ul style="list-style-type: none"> • Transport and tow boom. • Anchoring and Connecting boom to shore • <i>Safe</i> vessel and crew operations. (Refer to ICS-208) 	<ul style="list-style-type: none"> • Performed Without Challenges (P) • All operations conducted in a safe manner. • Containment Boom around vessel at pier- 100' of 12" boom was deployed from trailer to beach, retrieved by Edgartown Shellfish (ES) vessel, towed around dock to Edgartown HM (EHM) vessel, which was moored and served as the "leaking" vessel at the dock. ES delivered one end of boom to dock team at head of dock where boom was made fast. ES then towed boom around EHM vessel, passed to shoreside team who secured the boom to the dock at the shoreline. One anchor set was used at the only connection point in this boom array (at 50' mark where tow 50' sections of 12" boom were connected. MER provided instruction on and demonstrated the use of sorbent boom to line the containment boom and provide another preventative layer of containment/protection. • 150 feet of 12" was deployed as containment boom around a vessel at a mooring. The EHM vessel was again used as the leaking vessel and the ES small boat deployed 150' of 12" boom around the EHM vessel utilizing 3 anchor sets. Boom was deployed in a triangle configuration based on the 3 available anchor points (at each boom connection point). The ES crews boat handling skills were evident as they had little difficulty deploying this boom around the vessel despite a fresh breeze from the WNW. 150' of boom was chosen based on a preliminary calculation of the EHM vessel length and mooring scope (3x vessel length plus mooring ball scope) and it was determined after completing the deployment and observing the vessel swing within the boomed area, responders agreed that 200' of boom would have been more effective than 150'. This configuration was demobilized and the ES vessel towed the boom back to shore where it was staged for the diversion booming evolution.

			<ul style="list-style-type: none"> • 200' of Diversion boom (12") was deployed (2-100' boom sections in a cascade array) adjacent to the boat-landing pier. The ES small boat was the deploying vessel. A shoreside team prepared a shoreside anchor point using a double rebar configuration and the ES vessel towed 100' of boom from the shoreline to create the first diversion boom leg. For the second 100' diversion leg, conditions allowed the ES vessel to tow the seaward end of the boom out and position it relative to the first boom leg, deploying and setting the seaward anchor first. The shoreside team then utilized a Danforth anchor to anchor the shoreward end of this boom leg. The ES vessel configured the boom to allow for them to transit between boom sections without compromising the effectiveness of the diversion boom array. • Pier was ideal location for deploying boom. Large area and easy to offload and retrieve equipment. • MER provide excellent hands-on training for the equipment in the MassDEP trailer. Crews worked well on connecting boom and bridles. • Response vessels did an excellent job of towing sections of boom from the staging area. They were deployed seamlessly by pulling off the beach. This was done easily and safely and directed by the shore team on the pier. • Recovery of all boom conducted very safely. The ES vessel worked well with the shore team during all phase of each evolution.
Operational Coordination	Create and Execute An Assignment List (ICS 201)	<ul style="list-style-type: none"> • Fill out ICS 201 • Assignments in ICS 201 are followed and on-scene adjustments. • Participants demonstrate command and control of exercise 	<ul style="list-style-type: none"> • Performed without Challenges (P) • As this was a First Responder training exercise, no formal command structure was established. All deployment instruction and direction came from exercise controllers including MassDEP, Moran, and Nuka Research personnel. • All boat crews and shore teams worked well together to perform all tasks. • Special thanks to Chief Shemeth and the Edgartown Fire Department for providing their station house as a classroom for the First Responder Exercise.
Operational Communications	Effectively Communicate Using VHF equipment	<ul style="list-style-type: none"> • Create Communications Plan • Communicate with other participants using organic VHF equipment 	<ul style="list-style-type: none"> • Performed without Challenges (P) • Given the close proximity of strike teams, voice communications were used more often than VHF communications. Voice communications were sufficient for this evolution as the vessels were able to work close to the pier, to shore, and to each other. Wind and ambient noise were also not a factor, further facilitating verbal communications. When used, VHF communications were very effective overall. All strike teams used CH-17.

Table 2. Summary of Organizational Capability Targets and Associated Critical Tasks

The following sections provide an overview of the performance related to each exercise objective and associated core capability, highlighting strengths and areas for improvement.

Objective 1: Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 1: Environmental Response/Health and Safety

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: Participants from multiple agencies and contractors (Edgartown, Oak Bluffs, Tisbury, Moran Environmental, MassDEP) worked well together to complete assigned tasks.

Strength 2: All participants conducted the boom deployment safely.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Review and modify CI-21 as appropriate based on the input provided by first responders on local conditions and locations of aquaculture within Edgartown Harbor and Katama Bay.

Reference: Massachusetts Geographic Response Plan Tactics Guide

Analysis: During the training, an impromptu discussion and review of the CI-21 GRP including local conditions, currents in the harbor, potential shoreside recovery locations, culverts in Edgartown Harbor that might benefit from blocking strategies, and aquaculture operations in the area. There was clearly a significant amount of local knowledge at the exercise and they provided a great deal of information to consider in making revisions to the CI-21 GRP.

Area for Improvement 2: Replace the sledgehammers in the Edgartown, Oak Bluffs, and Tisbury Fire Department trailers with slide hammers during the routine maintenance cycle.

Reference: MassDEP Trailer Inventory.

Analysis: Slide hammers are much safer than sledgehammers for driving rebar stakes into the ground. Some MassDEP trailers have already been outfitted with slide hammers. Sledgehammers should be replaced with slide hammers in all MassDEP trailers during upcoming routine maintenance cycles.

Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 2: Operational Coordination

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: An Incident Commander was not established for this exercise. All departments worked well together to accomplish all three tactics during the exercise.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference: N/A

Analysis: N/A

Objective 3: Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire departments, police departments, harbor masters, and other state and federal first responders using VHF communications

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 3: Operational Communications

Strengths

The full capability level can be attributed to the following strengths:

Communications was a strong point of the exercise.

Strength 1: Given the close proximity of strike teams, voice communications were used more often than VHF communications. Voice communications were sufficient for this evolution as the vessels were able to work close to the pier, to shore, and to each other. Wind and ambient noise were also not a factor, further facilitating verbal communications. When used, VHF communications were very effective overall. All strike teams used CH-17.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference: N/A.

Analysis: N/A.

The Edgartown Shellfish Department vessel completes a pier side containment booming tactic.



Photo courtesy of Nuka Research & Planning Group

Containment boom being deployed around the Edgartown Harbormaster vessel on a mooring ball.



Photo courtesy of Nuka Research & Planning Group

Textbook cascade diversion tactic deployed from shore.



Exercise participants conducting a "hotwash" to identify what went well and areas for improvement.



Photos courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the Edgartown, Oak Bluffs and Tisbury Fire Departments and Harbormasters following the MassDEP First Responder Exercise conducted on October 24th, 2016.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Core Capability 1: Environmental Response/Health and Safety	1. Implement Tactics in GRP	Review and modify CI-21 as appropriate based on the input provided by first responders on local conditions.	Planning	Nuka Research	Mike Popovich	11/1/16	2/1/17
Core Capability 1: Environmental Response/Health and Safety	2. Overview of Response Equipment	Replace the sledgehammers in the Edgartown, Oak Bluffs, and Tisbury Fire Department trailers with slide hammers during the routine maintenance cycle.	Equipment	MER	John Duponte	11/1/16	4/1/17

¹ Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations	
Town of Edgartown, MA	Participant Count
Edgartown Fire Department	5
Edgartown Harbormaster	2
Edgartown Shellfish Department	3
Town of Oak Bluffs, MA	
Oak Bluffs Fire Department	4
Town of Tisbury, MA	
Tisbury Fire Department	3
Tisbury Harbormaster	2
Town of Chilmark, MA	
Chilmark Fire Department	2
Town of Aquinnah, MA	
Aquinnah Fire Department	3
TOWN PARTICIPANTS	24
Federal	
United States Coast Guard (USCG)	2
State	
Massachusetts Department of Environmental Protection (MassDEP)	1
Massachusetts Steamship Authority	1
Nuka Research and Planning Group, LLC (contractor for MassDEP)	2
Moran Environmental Recovery (contractor for MassDEP)	2
TOTAL	32

46% of first responders reported having previous GRP exercise experience.

APPENDIX C: EXERCISE EVALUATION FORM

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**MassDEP
Geographic Response Plan (GRP)
Exercise and Testing Program**

Participant Feedback Form

1 Strongly disagree	2 Mildly disagree	3 Neutral	4 Mildly agree	5 Strongly agree
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Please use the above rating scale to answer the questions for each of the following topics.

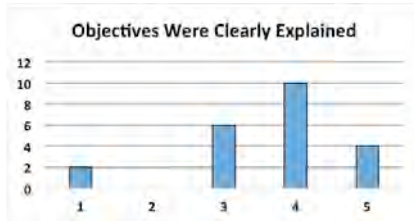
The objectives were clearly explained and the exercise met those objectives.	1 2 3 4 5
Comments:	
The material appropriately challenged me and the pace of instruction was correct.	1 2 3 4 5
Comments:	
The instructor(s) did an excellent job.	1 2 3 4 5
Comments:	
I found the classroom to be a comfortable learning environment.	1 2 3 4 5
Comments:	
I feel more prepared to respond to an oil spill than I did before this exercise.	1 2 3 4 5
Comments:	
The best thing about this training was _____.	
This training could have been improved by _____.	

Please use the back of the sheet if you need more room for comments.

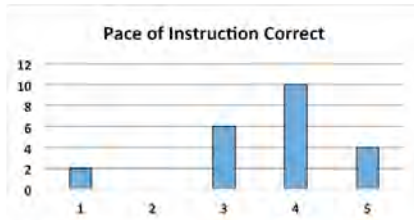
(Rev 2016)



Student Feedback Summary



Student Comments: None.



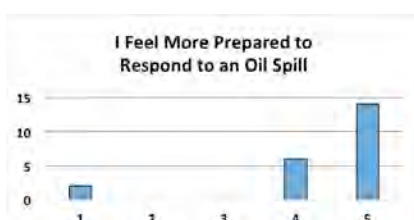
Comments: None.



Comments: "Good class & field demo; Maybe more time on containment strategies."



Comments: None



Comments: "Good field demo; Good training."

The best thing about this training was... "Lunch; Hands-on; use of equipment; Understanding we need better planning; Hands-on experience; Food; Hands-on drill; Team work; hands-on portion really beneficial; Great weather; Included the whole community; Hands-On training; Deploying the boom."

This training could be improved by.... "Lunch; There was enough equipment and plenty of students to conduct simultaneous one's so we all could have had hands on; Weather; Everything can be; More time out in the field."